

# Cartilage Tissue in Palatine Tonsils ( Heterotopia vs. Metaplasia )

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Non-lymphoid tissues may be encountered in routinely removed tonsils due to infectious or obstructive reasons. Several findings suggest that cartilage is an inherent tissue heterotopia rather than being a metaplastic secondary process to some previous stimuli. We present a cartilaginous heterotopia in this region in a 13-year-old girl supporting the heterotopia concept. *Ann Med Sci* 2002;11:69-70

**Key words:** heterotopia, cartilage, palatine tonsil

Pathologists may be consulted about medical legal cases that involve complications allegedly related to excessive surgery in routine tonsillectomy specimens<sup>1</sup>. This attempt has also raised the question of whether cartilage tissue might also be an inherent component of lymphoid tissue in this anatomic region<sup>1,2</sup>. We present a 13-year-old girl whose tonsillectomy specimens revealed cartilage with features of heterotopia rather than being a metaplastic secondary event following tissue inflammation or necrosis.

## Case

A 13-year-old girl was seen at the ENT outpatient clinic with complaints of recurrent acute tonsillitis impeding regular training. A tonsillectomy was made and two enlarged palatine tonsils with dimensions of 2.5x2x1 cm each, were received. Histopathological examination revealed bilateral lymphoid hyperplasia with prominent germinal centers. The right tonsillar surface also showed a minute papilloma. In the same tonsil a prominent hyaline cartilage with a mean diameter of 2 mm was found at the base with a prominent perichondrial border (Figures 1 and 2). Neither active inflammation, fibrous scar tissue nor necrosis were seen in the specimens. These findings suggested us an inherent heterotopia rather than a secondary event to other pathological changes.

## Discussion

Connective tissue metaplasia is the formation of mesenchymal tissues such as cartilage, bone, or adipose tissue in tissues that normally do not contain these elements and it is thought to arise from a reprogramming of undifferentiated mesenchymal cells<sup>2</sup>. Traditionally occurrence of cartilage and bone in the palatine tonsillar area has been regarded as a secondary, reactive metaplastic change to prior inflammation<sup>3,4</sup>. Local chemical and physical changes due to chronic inflammation may lead to releasing of substances producing heterotopic cartilage and bone formation<sup>5</sup>. Patients with this sort of mesenchymal tissue were found to have an average age of 24 which was older than most individuals going tonsillectomy in their teens<sup>3</sup>.

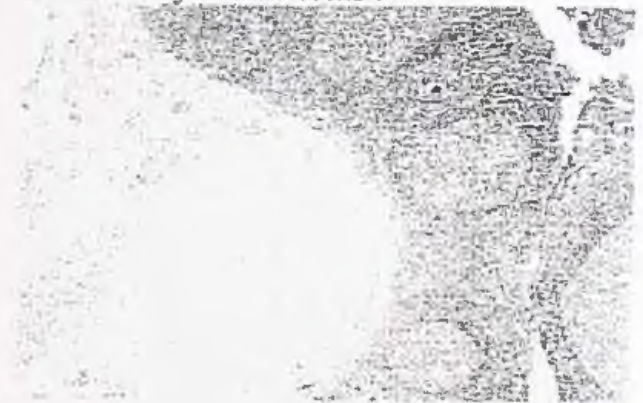


Figure 1. (H.E.X 50) Low power view of hyaline cartilage and palatine lymphoid tissue.

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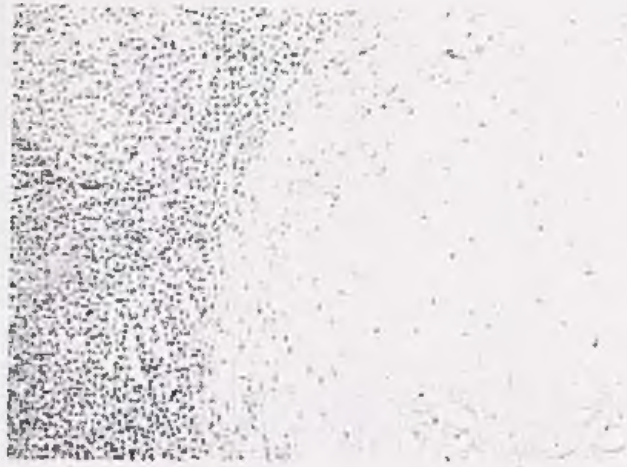


Figure 2. (H.E.X 200) Perichondrial tissue between the cartilage and lymphoid elements.

A recent survey of fifty tonsillectomies have found four cases of cartilage ( in one case bilateral ) in the palatine tonsils<sup>1</sup>. In all these cases the cartilage tissue was intimately associated with salivary gland tissue or just adjacent to it and was never intermingled with the lymphoid tissue, contrary to the present case. However, the mean age of these patients were 26.6 years, again somewhat older than the expected age group of tonsillectomies<sup>1</sup>.

In the present case there was not any tissue change such as necrosis, fibrous scar tissue or active inflammation which may result in local tissue mediators for a mesenchymal metaplastic change. There was a sharp tissue boundary between the lymphoid tissue and the hyaline cartilage with a presumable perichondrial border. The cartilage tissue was also mature reflecting the inherent heterotopia rather than a metaplastic occurrence. We suggest that the routine histopathological examination of tonsillectomy specimens would help us understanding the heterogeneity of this lymphoid tissue.

## References

1. Gnepp DR, Souther J : Skeletal muscle in routine tonsillectomy specimens: a common finding. *Hum Pathol* 2000;31:813-816.
2. Cotran R, Kumar V, Collins T: *Pathologic Basis of Disease*, 6th edition, W.B. Saunders Co., Philadelphia, 1999:37.
3. Mills SE, Feschner RE: Larynx and pharynx. In: Sternberg SS, Ed., *Histology for Pathologists*, 2nd edition, Lippincott-Raven Publishers, 1997:402.
4. Bhargava D, Raman R, Al Abri RK, Bushnamath B: heterotopia of the tonsil. *The Journal of Laryngology and Otology* 1996;110:611-612.
5. Lindholm S, Hackman R, Lindholm RV: Histodynamics of experimental heterotopic osteogenesis by transitional epithelium. *Acta Chirurgica Scandinavica* 1973;139:617-623.